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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,960	12/04/2002	Gopal B. Avniash	125517/GEM-0071	2536
23413	7590	10/25/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			JUNG, WILLIAM C	
			ART UNIT	PAPER NUMBER
			3737	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

7/15

Office Action Summary	Application No. 10/065,960	Applicant(s) AVNIASH ET AL.	
	Examiner William Jung	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-26 and 29-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-26 and 29-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>94422002 12/04/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 27, 2005 have been fully considered but they are not persuasive.

After further consideration of the response and amendment, examiner respectfully disagrees with the applicant. Examiner would like to point out that Sontag et al disclose triggering the control signal ON/OFF or signal generator for MRI, x-ray, etc. from the cardiac signal, which by definition cardiac gating. The cardiac signal in Sontag et al involves patient's lungs where the measurement includes flow rate, pressure, lung volume, and carbon dioxide concentration as a function of time. The flow rate over time is acceleration and pressure measurement is force over area. Therefore, Sontag et al disclose all claimed features in claims 1-18, 21-26, and 30 as described from the previous office action dated May 3, 2005 and repeated below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-16, 18, 21-26, 29, 30, 32, and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by *Sontag et al* (US 6,076,005).

Sontag et al anticipate all claimed features in claims 1-16, 18, 21-26, 29, 30, 32, and 34-36.

Claims 1, 7, 10, 16, 18, 21, 22, 25, 26, 29, 32, and 34-36: Sontag et al disclose a method and system to provide gating of therapeutic or diagnostic (i.e. medical imaging) energy to a tissue volume of a patient during a portion of the patient's respiratory cycle where the measurement of the respiratory cycle is based on displacement (acceleration sensor) and pressure (force sensor) (col. 2, lines 47-63; col. 4, lines 25-42; col. 5, line 11 – col. 6, line 6). Regarding claims 10 and 18, the element strain gauge is well known in the art to measure stress, pressure or force on a sensor, therefore, strain gauge is a functional equivalent of pressure or force sensor.

Claims 2-6: Sontag et al discloses that the diagnostic method and device described above may be any of the following, x-ray, CT, MRI, PET, SPECT, or ultrasound (col. 4, lines 14-24; col. 4, lines 43-56; col. 5, lines 16-21).

Claims 8, 9, 14, 15, 23, and 30: Sontag et al further disclose that the gating signals are obtained based on breathing cycle with phase of the cycle is analyzed (signature analysis) and the this database provides the trigger point automatically based on a d specified incidence (equivalent to pattern recognition extraction) (col. 5, line 51 – col. 6, line 6).

Claims 11-13, and 17: Sontag et al disclose that the sensor described above measures acceleration with linear accelerator 3 (col. 5, lines 16-19).

Claims 24: Sontag et al disclose that the sensor includes measuring pressure from a gas or fluid flow (col. 5, lines 4-8). Although, Sontag et al do not disclose that the structure of the sensor is a non-conducting tube, airflow or fluid flows are measured thru a conduit, which may be a tube.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19, 20, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sontag et al* as applied to claims 1, 18, 25, and 32 above, and further in view of *Arcelus* (US 6,149,602).

Sontag et al substantially disclose all claimed features in claims 19, 20, 31, and 33. Although, Sontag et al is silent as to the placement of the sensor on the patient as described in applicant's claims 19, 20, 31, and 33, it is well known in the art that the pulse or the pressure/force measurement can be made where the mechanical pulse are the strongest, i.e. chest, wrist, neck, etc. As demonstrated by Arcelus that for pulse monitor can be monitor or pulse measurement, it is well known in the art as taught by Arcelus, that the sensor on the ECG can be attached to the patient's wrist. In addition, Arcelus's device has a bandwidth limitation of 125 Hz (col. 4, lines 15-21; col. 5, lines 25-32). Furthermore, Arcelus discloses signal processors 42 where combination of low pass and high pass filters are used to rid of unwanted signal, effectively resulting in band pass filter. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Arcelus to Sontag et al to achieve the claimed invention.

6. Claims 37 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over *Sontag et al* in view of *Arcelus*.

Sontag et al substantially disclose all claimed features in claims 37 and 38. Sontag et al disclose a method and system to provide gating of therapeutic or diagnostic (i.e. medical imaging) energy to a tissue volume of a patient during a portion of the patient's respiratory cycle where the measurement of the respiratory cycle is based on displacement (acceleration sensor) and pressure (force sensor) (col. 2, lines 47-63; col. 4, lines 25-42; col. 5, line 11 – col. 6, line 6). Regarding claims 10 and 18, the element strain gauge is well known in the art to measure stress, pressure or force on a sensor, therefore, strain gauge is a functional equivalent of pressure or force sensor. Although, Sontag et al is silent as to the placement of the sensor on the patient as described in applicant's claims 37 and 38, it is well known in the art that the pulse or the pressure/force measurement can be made where the mechanical pulse are the strongest, i.e. chest, wrist, neck, etc. As demonstrated by Arcelus that for pulse monitor can be monitor or pulse measurement, it is well known in the art as taught by Arcelus, that the sensor on the ECG can be attached to the patient's wrist. In addition, Arcelus's device has a bandwidth limitation of 125 Hz (col. 4, lines 15-21; col. 5, lines 25-32). Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply the teachings of Arcelus to Sontag et al to achieve the claimed invention.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 3737

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJ

October 5, 2005


ALI IMAM
PRIMARY EXAMINER